



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/653,798

09/03/2003

Stephen Palm

BP2488.1

4537

34399 7590 06/21/2007  
GARLICK HARRISON & MARKISON  
P.O. BOX 160727  
AUSTIN, TX 78716-0727

EXAMINER

ZEWDU, MELESS NMN

ART UNIT

PAPER NUMBER

2617

MAIL DATE

DELIVERY MODE

06/21/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/653,798

Applicant(s)

PALM ET AL.

Examiner

Meless N. Zewdu

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-20 and 22-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-2, 4-10, 12-20 and 22-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Amendment*

1. This action is in response to the communication filed on 4/18/07.
2. Claims 3, 11 and 21 have been canceled in the current amendment.
3. Claims 1, 2, 4-10, 12-20 and 22-26 are pending in this action.
4. This action is final.

### *Double Patenting*

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-26 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 41 of copending Application No. 10/660,849. Although the conflicting claims are not identical, they are

Art Unit: 2617

not patentably distinct from each other because the difference between the claims in the instant application and claims in the copending application is that the claims in the instant application are broader than the claims in the copending application..

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 9-14, 17-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seppala et al. (Seppala) (US 7,120,131 B2) in view of Abramov et al. (Abramov) (US 6,486,832 B1).

**As per claim 1:** a method for operating a wireless terminal within a Wireless Local Area Network (WLAN) (see col. 6, line 55-col. 7, line 2), the method comprising:

listening to a plurality of beacons transmitted by a corresponding plurality of Wireless Access Point (WAPs) of the WLAN (see col. 7, line 60-col. 8, line 3), wherein listening is inherent to the communication that takes place and the beacon is the advertising message broadcast by the APs);

Art Unit: 2617

for each beacon/signal, characterizing the plurality of beacons/signals with regard to signal quality (see col. 1, lines 52-67; col. 7, line 67-col. 8, line 20; claim 3);

based upon the characterization, selecting a desired WAP of the plurality of WAPS (see col. 7, line 67-col. 8, line 20);

associating/select with the desired WAP of the plurality of Waps (see col. 8, lines 4-20). But, Seppala does not explicitly teach about sweeping a gain vector of a servicing antenna of the wireless terminal; a gain vector of the servicing antenna is substantially directed toward the beacon and adjusting a gain vector of a servicing antenna of the wireless terminal so that it is substantially directed toward the desired WAP of the plurality of WAPS, as claimed by applicant. However, in the same field of endeavor, Abramov teaches about direction agile-antenna system for wireless communications, sweeping/scaning a gain vector of a servicing antenna of the wireless terminal (see col. 1, lines 52-67; col. 4, lines 55-67) ; for each beacon detected, characterizing the beacon with regard to signal quality when the gain vector of the servicing antenna is substantially directed toward the beacon (see col. 1, lines 52-67; col. 7, lines 13-29); and wherein the directivity of the antenna is adjusted/changed based on the antenna gain (see at least col. 3, lines 18-41; col. 5, lines 43-55; col. 6, lines 32-40; col. 6, line 66-col. 7, line 12). It is to be noted that RF gain is a vector function and further, when the references are combined the agile-directional antenna will be able to direct to a selected AP, at a desired direction. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the teaching of Seppala with that of Abramov for the advantage of establishing high data links in a

Art Unit: 2617

mobile wireless network with a high degree of data integrity while obviating the need for high power RF transmission (see col. 1, lines 38-45).

**As per claim 2:** the network is a mobile wireless. Hence, when the mobile returns to its previous position or when it reattaches to a previous AP, it will have to listening and characterizing the signal/beacon again. Hence, the features of claim 2 are essentially similar to the features of claim 1, except associating with different WAP of the plurality of WAPs, which is taught by Seppala (see col. 7, lines 24-44).

**As per claim 4:** Abramov teaches a method, wherein characterizing the plurality of beacons with regard to signal quality comprises measuring a signal strength of at least some of the plurality of beacons (see col. 6, lines 6, lines 32-40).

**As per claim 5:** Abramov teaches a method, wherein characterizing the plurality of beacons with regard to signal quality comprises measuring a signal to noise ratio corresponding to at least some of the plurality of beacons (see col. 6, lines 32-40; col. 1, lines 24-28).

**As per claim 6:** Seppala teaches a method, wherein characterizing the plurality of beacons with regard to signal quality comprises:

receiving loading data carried by at least some of the plurality of beacons (see col. 7, lines 45-59); and

processing received loading data to determine the desired WAP of the plurality of WAPS (see col. 7, line 45-col. 8, line 20).

**As per claim 9:** most of the features of claim 9 are similar to the features of claim 1, except the following:

Art Unit: 2617

a directional antenna, which is taught by Abramov (see fig. 5);

a radio frequency unit operably coupled to the directional antenna, which is also taught by Abramov (see figs. 9 and 10; col. 3, lines 18-67); and

a processor/controller operably coupled to the radio frequency unit (see figs. 3 and 4; col. 3, lines 18-67; col. 4, lines 1-27), wherein the plurality of instructions must be obvious from the functions performed by the combination of the prior art. Motivation is same as provided in the rejection of claim 1.

**As per claim 10:** claim 10, which incorporates features from claims 1 and 2, calls for a processor/controller that operates to execute instructions to perform the functions recited in claims 1 and 2. Since, the features of claims 1 and 2 are shown to have been taught by the combined prior art of reference, claim 10 is rejected on the same ground and motivation as claims 1 and 2.

**As per claim 12:** the feature of claim 12 is similar to the features of claims 4 and 5.

Hence, claim 12 is rejected on the same ground and motivation as claims 4 and 5.

**As per claim 13:** the feature of claim 13 is similar to the features of claim s 4 and 5.

Hence, claim 13 is rejected on the same ground and motivation as claims 4 and 5.

**As per claim 14:** the feature of claim 14 is similar to the feature of claim 6. Hence,

claim 14 is rejected on the same ground and motivation as claim 6.

**As per claim 17:** Abramov teaches a wireless terminal, (see fig. 5), wherein the directional antenna comprises:

a single antenna having a plurality of antenna elements (see fig. 5; col. 2, line 66-col. 3, line 12); and

a directional antenna controller operably coupled to the single antenna and to the radio frequency unit (see fig. 5; col. 3, lines 17-52).

**As per claim 18:** Abramov teaches a wireless terminal (see fig. 5), wherein the directional antenna comprises:

a plurality of antennas (see fig. 5; col. 2, line 66-col. 3, line 12); and

a directional antenna controller operably coupled to the plurality of antennas and to the radio frequency unit (see fig. 5; col. 3, lines 17-52).

**As per claim 19:** the feature of claim 19 are similar to the feature of claim 1, except claim 19 is directed a means to perform the steps of method claim 1. But, since the steps of claim 1 are performed, the means is obvious and claim 19 is rejected on the same ground and motivation as claim 1.

**As per claim 20:** the features of claim 20 are similar to the features of claim 2, except claim 20 is directed to a means claim required to perform the steps of claim 2. But, since the steps of claim 2 are performed, the means is obvious and claim 20 is rejected on the same ground and motivation as claim 2.

**As per claim 22:** the feature claim 22 is similar to the feature of claim 4. Hence, claim 22 is rejected on the same ground and motivation as claim 4.

**As per claim 23:** the feature of claim 23 is similar to the feature of claim 5. Hence, claim 23 is rejected on the same ground and motivation as claim 5.

**As per claim 24:** the features of claim 24 are similar to the features of claim 6. Hence, claim 24 is rejected on the same ground and motivation as claim 6.



Art Unit: 2617

Claims 7-8, 15-16 and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references applied to claims 1, 9 and 19 above, and further in view of Crilly, Jr. et al. (Crilly) US 6,611,231 B2).

**As per claim 7:** the above references do not teach about capability data that indicates whether a corresponding access point is capable of directional antenna servicing, as claimed by applicant. However, in the same field of endeavor, Crilly teaches about adaptively steered antenna arrays, which can be used for WLAN (see col. 8, lines 38-51), wherein a routing information includes desirable transmit power level (hence power control capability), antenna pointing direction (see col. 7, line 15-col. 8, line 10). When the references are combined as shown above, the transmit power level and antenna pointing direction information will be user for selecting a desired WAP. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to further modify the above references with the teaching of Crilly for the advantage of providing a highly reliable wireless link in the presence of interference (see col. 7, lines 40-44).

**As per claim 8:** the difference between the features of claim 7 and 8 is that in claim 8, the capability data is power control, as oppose to antenna direction in claim 7.

Nonetheless, Crilly also teaches about transmitting power level (see col. 7, line 15-col. 8, line 10). Motivation is same as provided in the rejection of claim 7 above.

**As per claim 15:** the features of claim 15 are similar to the features of claim 7. Hence, claim 15 is rejected on the same ground and motivation as claim 7.

Art Unit: 2617

**As per claim 16:** the features of claim 16 are similar to the features of claim 8. Hence, claim 16 is rejected on the same ground and motivation as claim 8.

**As per claim 25:** the features of claim 25 are similar to the features of claim 7. Hence, claim 25 is rejected on the same ground and motivation as claim 7.

**As per claim 26:** the feature of claim 26 is similar to the features of claim 8. Hence, claim 26 is rejected on the same ground and motivation as claim 8.

### ***Response to Arguments***

Applicant's arguments filed 4/18/07 have been fully considered but they are not persuasive. Following are arguments and corresponding responses.

**Argument I:** with regard to claims 1, 9 and 19, applicant argues by saying the prior art, in combination or alone, does not disclose or suggest "for each beacon detected, characterizing the beacon with regard to signal quality when the gain vector of the servicing antenna is substantially directed toward the beacon; based upon the characterization, selecting a desired WAP of the plurality of WAPs; and associating the desired WAP of the plurality of WAPs".

**Response I:** examiner respectfully disagrees with the argument. In that Abramov teaches about a direction-agile antenna that scans/sweeps for a high gain (high quality) signal/beacon direction (see col. 1, lines 52-67; col. 4, lines 55-67; claim 3).

Furthermore, as discussed above, in the rejection of the claims in question, Seppala teaches about selecting a desired WAP of the plurality of WAPs, and associating the

Art Unit: 2617

desired WAP of the plurality of WAPs (col. 8, lines 4-20). Thus, the argument is found not have been convincing and consequently, the outstanding rejection is upheld.

**Argument II:** Applicant also says "disagrees with the examiner's statement on page 5 of the Detailed Action that "Abramov teaches --- characterizing the beacon when the gain vector of the serving antenna is substantially directed toward the beacon", as Shown in col. 6, lines 33-40 of Abramov.

**Response II:** examiner respectfully disagrees with the argument. In that, Abramov teaches about a gain vector of the serving antenna is substantially directed toward the beacon (see col. 1, lines 52-67; claim 3). Furthermore, Seppala provides -- characterizing a signal/beacon with regard to signal/beacon quality (see col. 8, lines 4-20), the combination which is discussed in the rejection of the claims in question, above..

**Argument III:** Applicant further argues by saying, in Abramov, the fine tuning is performed after the master device has established a connection to the slave device, as oppose to the present claimed invention, wherein the characterization is performed prior to "associating with the WAP of the plurality of WAPs".

**Response III:** examiner respectfully disagrees with the argument. In that Seppala provided a technique wherein the MN is associated with a selected AP based on comparison of QoS (see col. 8, lines 4-20). Thus, when the references are combined as discussed above, the antenna direction will be determined based on Seppala's QoS.

Art Unit: 2617

**Argument IV:** in Abramov, the signal strength measurement is not necessarily made with "the gain vector of the servicing antenna --- substantially directed toward the beacon," as claim in the present application.

**Response IV:** examiner respectfully disagrees with the argument. In that Abramov teaches about a gain vector of the servicing antenna --- substantially directed toward the beacon, (see col. 1, lines 52-67; claim 3). Note: since the term, "substantially" is relative, it carries no patentable weight because any direction closer toward a detected/received beacon/signal satisfies the call. Thus, the arguments have been found unconvincing.

**Remark:** examiner notes and agrees with applicant's argument that Abramov does not teach characterizing a beacon/signal with regard to quality. At least there is not explicit statement in Abramov regarding signal/beacon quality. This feature is, however, taught by Seppala, as pointed out in the rejection of the claims (particularly, claim 1) above. This minor adjustment within same references does constitute a new ground of rejection.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

Art Unit: 2617

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Meless N. Zewdu whose telephone number is (571) 272-7873. The examiner can normally be reached on 8:30 am to 5:00 pm..

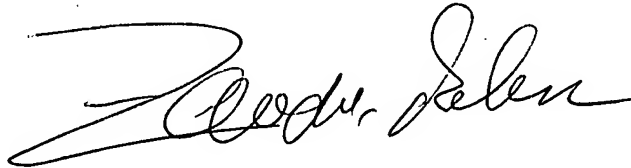
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Appiah Charles can be reached on (571) 272-7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 2617

Any inquiry of a general nature relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

Meless Zewdu

A handwritten signature in black ink, appearing to read 'Meless Zewdu', written in a cursive style.

Primary examiner

17 June 2007.